

L 18383-63

ACCESSION NR: AP3006123

respect to a known exact value of the pressure derivative at the wave front. The other parameters are calculated from gasdynamic equations. The results obtained by this method are in good agreement with those of some exact calculations of gasdynamic motions (a strong explosion and an explosion with back pressure). The method is applied to gas flows with variable adiabatic exponent and heat absorption or dissipation (radiative de-excitation, of which the most typical example is bremsstrahlung). It is concluded that this method, in combination with the method of integral correlations, makes it possible to carry out approximate calculation of gasdynamic motions. Orig. art. has: 7 figures, 36 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 06May63

DATE ACQ: 11Sep63

ENCL: 00

SUB CODE: AI

NO REF SOV: 013

OTHER: 001

Card 2/2

NEMCHINOV, I.V. ; TSIKULIN, M.A.

Estimation of heat transfer by radiation for large meteors  
moving in the atmosphere at great speed. Geomag. i aer. 3  
no.4:635-646 JI-Ag '63. (MIRA 16:9)

1. Institut khimicheskoy fiziki AN SSSR.

12/20/65 5P(1)  
ACROSS IN: AP-002860

8/207/64/010/005/0018/0029

Author: Danilov, I. V. (Moscow)

13  
4  
6  
Title: Flow of a mass of gas being heated in the regular regime

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 5, 1964, 18-29

TOPIC TAGS: gas flow, nonadiabatic process, similar solution, specific volume, equation of state

ABSTRACT: The author investigated the problem of the nonadiabatic flow of a gas with the intensity of energy liberation from the molecules depending on the thermodynamic parameters characterizing the state, such as temperature and density. The analysis for deriving the solutions is analogous to that presented by L. I. Sedov (Metody podobiya i razmernostiy v mekhanike, Izd. 3-e, Gostekhizdat, 1954, 242-243) for the problem of adiabatic dispersion of a gas. The equations of energy and momentum are given by

$$\frac{\partial \epsilon}{\partial t} + p \frac{\partial v}{\partial t} = Q = Q_0 \left( \frac{v}{v_0} \right)^{-\alpha} \left( \frac{p}{p_0} \right)^{-\beta} \left( \frac{t}{t_0} \right)^{\gamma} \left( \frac{m}{m_0} \right)^{\delta}$$

$$\left( \epsilon = \frac{p}{(n-1)}, \quad p = \frac{1}{p} \right)$$

Card 1/2

1. 7(2011-65)  
ACCESSION NO.: AP5002860

$$\frac{\partial \epsilon}{\partial t} + \frac{\partial p}{\partial m} r^{-1} = 0, \quad \frac{\partial r}{\partial t} = u, \quad \frac{1}{r} \frac{\partial r^2}{\partial t} = v,$$

where  $\epsilon$  is the energy per unit mass of the gas,  $\gamma$  is the adiabatic index,  $v$  is the specific volume,  $\rho$  is the density,  $t$  is the time,  $m$  is the Lagrangian coordinate of the particle,  $u$  is the velocity of the gas,  $r$  is the Eulerian coordinate, and  $\lambda = 1, 2, 3$  for the plane, cylindrical, and spherical geometries, respectively. In the regular regime, solutions of the following form were sought:

$$\begin{aligned} p &= P(m) p^*(t), & v &= V(m) v^*(t), \\ u &= U(m) u^*(t), & r &= R(m) r^*(t). \end{aligned}$$

A function  $f$ , characterizing the energy distribution in the molecules, is defined by

$$PV^{\gamma}/(n) = \text{const.}$$

The following boundary conditions were considered

$$\begin{aligned} p &= 0, & U &= 1, & R &= 1, & m_0(r) &= M, \\ p &= 1, & V &= 1, & R &= 0, & U &= 0, & m &= 0. \end{aligned}$$

Card 2/3

1 27204-65  
ACCESSION NO: AP5002860

Here  $\zeta(u) = 2, 2u$  and  $4u$  when  $\nu = 1, 2$  and  $3$ , respectively. When  $f$  is a constant, the kinetic energy  $E_K$ , the thermal energy  $E_T$ , and the total mass  $M$  are given by the expression

$$\begin{aligned} E_K &= \frac{1}{2} \zeta(u) \rho (u^2) (r^2) J_K \\ E_T &= \frac{1}{2} \zeta(u) f (r^2) J_T / (k-1) \\ M &= \zeta(u) \rho (r^2) J_M \end{aligned}$$

where

$$J_K = \frac{r \left( \frac{r}{a} \right) \Gamma \left( \frac{n}{2} \right)}{2 \left( \frac{r}{a} + \frac{1}{2} \right)} \quad J_T = \frac{r \left( \frac{r}{a} + 1 \right) \Gamma \left( \frac{n}{2} \right)}{2 \left( \frac{r}{a} + \frac{1}{2} + 1 \right)}$$

The time dependence of the various parameters is also discussed. The following expression was derived for the pressure at the center at any time  $t^*$ :

$$p^* = \frac{3^{1/2} (k-1)^{1/2}}{(3k-1)^{1/2} \pi} \frac{R^{1/2}}{2^{1/2}} \left( \frac{E}{\tau} \right)^{1/2} \left( \frac{M}{L} \right)^{1/2}$$

Orig. Art. has: 2 figures and 66 formulas

ASSOCIATION: none

SUBMITTED: 20 May 64

NO REF SOV: 012

Card 3/3

ENCL: 00

OTHER: 002

SUB CODE: ME

L 4241-65 INT(1)/IMP(m)/EWA(3)/FCS(c)/EWA(1)

Pa-1

ACCESSION NR: P5006262

S/0040/65/029/001/0134/0140

AUTHOR: Nemchinov, I. V. (Moscow)

TITLE: Dispersion of a tri-axial gaseous ellipsoid in a regular state

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 1, 1985, 134-160

TOPIC TAGS: fluid dynamics, gas dynamics, gas flow, hydrodynamics

ABSTRACT: The exact particular solution of the equations of gas dynamics which was given by L. V. Oveyannikov ("New solution of the equations of hydrodynamics," DAN SSSR, 1956, v. 111, no. 1, pp 47-49) is used to describe the adiabatic dispersion of a tri-axial ellipsoidal shaped mass of gas into a vacuum. The results of numerical calculations are presented which show the variation of the shape of the gas cloud and the nature of its dispersion with time. A similar solution is found for the case of a gas moving in the presence of a heat source. These solutions are generalizations of (1) the exact particular solution of adiabatic dispersion in the one-dimensional case given by L. I. Sedov (DAN SSSR 1953, v. 90, no. 5, p 735; Metody podobiya i razmernosti v mekhanike. Gosstatkhizdat. 3rd edition, 1954, 242-248), and (2) the similar solution for gas moving with heating by the present author (PMTF, 1961, no. 1, pp 17-26; PMTF, 1964, no. 5). In the latter case, the velocity

Card 1/2



L 42611-65

ACCESSION NR: AP5004262

is proportional to the distance from the center of symmetry. The distribution of pressure and density proves to be dependent upon one arbitrary function whose surfaces of equal values of pressure and density are ellipsoids. "The author thanks O. S. Ryzhov and G. M. Shefter for their valuable discussions and also A. I. Zimin for his execution of the computations." Orig. art. has: 1 figure, 37 formulas.

ASSOCIATION: none

SUBMITTED: 02/11/66

NO REC NO: 000

ENCL: 00

CUB CODE: NA, NC

OTHER: 000

ACC NR: AP7000045

SOURCE CODE: UR/0207/66/000/005/0003/0016

AUTHOR: Kalmykov, A. A. (Moscow); Kondrat'yev, V. N. (Moscow); Nemchinov, I. V. (Moscow)

ORG: none

TITLE: The disintegration of an instantaneously heated substance and determination of the equation of state by the pressure and momentum

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 5, 1966, 3-16

TOPIC TAGS: state equation, dispersion equation, heating

ABSTRACT: A study was made of the pattern of separation of fragments of a substance heated "instantaneously" by the radiation of a laser, i.e., in a period of time considerably shorter than the characteristic time of separation. Thermodynamic functions describing the state of the substance at high pressures and high temperatures but at normal (or near-normal) density  $\rho_c$  were investigated. Such states can be obtained by "instantaneous" heating of the substance ( $\rho = \rho_0$ ) and its subsequent separation ( $\rho < \rho_0$ ). When the layer of the substance is heated to values of intrinsic energies much smaller than the value of the evaporation heat, a portion of the substance separates as the result of the interaction of rarefaction waves and the formation of negative stresses. The dependence of momentum in the presence of the "splitting-off" effect on the quantity of supplied energy and the thermodynamic

Card 1/2



ACC NR: AP7000045

properties of the substance was found for cases of uniform and nonuniform heating. During interaction between the laser emission and a sufficiently thick layer of the substance, the radiation flux decreases with the penetration depth as the result of absorption. The mass of the separated layer has little effect on the magnitude of the momentum. The value of momentum is the sum of the momentum of that layer of the substance which is heated to a gaseous state and the momentum of that layer of the substance which is partially evaporated or crushed, assuming that these values do not depend on each other. The authors thank I. L. Zel'manov, A. I. Petrukhin, and Ye. Rabinovich for valuable discussions. Orig. art. has: 35 formulas and 10 figures.

SUB CODE: 20/ SUBM DATE: 26Apr66/ ORIG REF: 009/ ATD PRESS: 5108

Card 2/2

ACC NR: AP7001995

SOURCE CODE: UR/0040/66/030/005/1022/1028

AUTHOR: Afanas'yev, Yu. V. (Moscow); Krol', V. M. (Moscow); Krokhin, O. N. (Moscow);  
Neuchinov, I. V. (Moscow)

ORG: Institute of Physics of the Earth, AN SSSR (Institut fiziki Zemli AN SSSR);  
Physics Institute, AN SSSR (Fizicheskiy institut AN SSSR)

TITLE: Gas dynamic processes during the heating of matter by means of a laser beam

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 6, 1966, 1022-1028

TOPIC TAGS: laser radiation, radiative heating, thermodynamic process

ABSTRACT:

An investigation was made of the heating process and the gas dynamic motion of matter subjected to the effects of a powerful laser beam. An examination was made of the case when a bounded transparent mass of gas was heated. The problem of the heating of an initially cold and motionless gas, filling a space bounded by a vacuum, was also solved. The gas dynamic approach for solving these problems was selected because at sufficiently powerful fluxes of laser radiation the rise in temperature is accompanied by the formation of gas dynamic motion of matter (evaporation), which itself exerts a substantial effect on the whole process of heating. One of the features of the process which complicates solution of the prob-

Card 1/2

ACC NR: AP7001995

lem is the dependence of the absorptive power on the state of matter during its gas dynamic motion. On the basis of a system of equations for motion, continuity, energy, and radiation transfer, expressed in Lagrange coordinates, a system of differential equations was derived. The existence of self-similar motion was shown. The results of the self-similar solution and of the numerical calculations were obtained and compared. A study was made of the possibility of employing the results obtained to describe the heating and evaporation of matter from the surface of a solid body under the effect of a Q-switched laser beam. The authors thank N. G. Basov, S. P. Kurdyumov, and A. A. Milyutin for discussing the problem and for their advice, and V. V. Novikova for her help in the numerical calculations. Orig. art. has: 14 formulas and 5 figures.

SUB CODE: 20/ SUBM DATE: 24Mar66/ ORIG REF: 004/ OTH REF: 001/ ATD PRESS: 5111

Card. 2/2.

ACC NR: AP7003249

(A)

SOURCE CODE: UR/0207/66/000/006/0003/0013

AUTHOR: Kalmykov, A.A.; Nemchinov, I.V.; Petrukhin, A.I.

ORG: none

TITLE: Experimental investigation of the scattering of an instantaneously heated substance and the appearance of momentum at energy concentrations smaller than the heat of evaporation

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 6, 1966, 3-13

TOPIC TAGS: laser heating, laser effect, ice, paraffin, LASER RADIATION, HEAT OF VAPORIZATION

ABSTRACT:

High-speed photography was used in an investigation of the scattering of a substance heated by laser radiation. The substances selected were ice and paraffin which were rapidly heated by a giant-pulse ruby laser to an energy concentration smaller than the heat of evaporation  $Q$ . The pulse duration at the half flux was  $\tau = 2 \times 10^{-8}$  sec. The rate of scattering of the substance was determined by means of a high-speed photo-chamber with a maximum speed of  $5 \times 10^7$  frames per second. The splitting-off was accompanied by momentum, which was generated by the scattering of the substance. The

Card 1/2

UDC: none

ACC NR: AP7003249

release of energy  $E_r$  in a surface layer with a thickness  $x_r$  or mass  $m_r$  in a time  $\tau < t_g$  (characteristic time of gasdynamic processes  $t_g = x_r/c$ , where  $c$  is the sonic velocity in the substance), resulted in the appearance of a pressure  $p_0 = (\gamma - 1)E_r/x_r$  in that layer. The closing up of rarefaction waves propagating from the boundary of the heated layer led to the appearance of negative stresses. When these stresses exceeded the dynamic tensile strength of the substance, a splitting-off took place. The maximum coefficient of energy utilization  $\xi = I/Q/E$  was found to be at an energy concentration in a unit of mass close to  $Q$  and lower, and can reach values close to maximum values at high energy concentrations (above the heat of evaporation). The authors thank their laboratory colleagues Ya. T. Goyevoy and E. M. Zubenko and V. S. Savinich, a student at the Moscow Physicotechnical Institute, for their help in the work. [JA]

SUB CODE: 20/ SUBM DATE: 02Jun66/ ORIG REF: 011/ OTH REF: 001  
ATD PRESS: 5114

Card 2/2

NAMECHINOV, Prokofiy Petrovich

[Accounting on collective farms] Ob uchete zatrat i dokladov  
v kolkhozakh. Moskva, Gos.izd-vo selkhoz.lit-ry, 1958. 127 s.  
(MIRA 1:1)

(Collective farms--Accounting)

SOV-49-58-6-5/12

AUTHOR: Nemchinov, S. V.

TITLE: Short-Term Forecasting of Non-Zonal <sup>Altitude</sup>/Displacements in the  
Topography of the Lower and Medium Troposphere (Kratkos-  
rochnyy prognoz nezonal'nykh otkloneniyy vysot absolyutnoy  
topografii dlya nizhney i sredney troposfery)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,  
1958, Nr 6, pp 752-764 (USSR)

ABSTRACT: A twenty-four hour prebaratic for the 1000 mb and 500 mb  
surfaces of the atmospheric pressure can be derived from a  
solution of a linear system of thermodynamic equations. The  
author gives the basic equations under an assumption that a  
large scale atmospheric displacement takes place over a dis-  
tance range of 1000 km and speed of 10 m/sec, and the  
motion of air masses agrees with the geostrophic law. Al-  
though a non-linear system of differential equations is  
sufficient for determining the pressure, temperature and  
vertical air movements, the difficulties of obtaining a  
correct mathematical interpretation make it impossible to  
define values for the height of the air masses. Therefore  
a method of finding these values from a continuity function  
has been found by the author and is considered by him to be  
adequate. He proves his statement and gives a final formula

Card 1/4



507-49-58-5-5/12

Short-Term Forecasting of Non-Zonal <sup>Altitude</sup> Displacements in the Topography of the Lower and Medium Troposphere.

for the practical purpose of plotting a twenty-four hour prebaratic chart for 1000 mb and 500 mb surfaces for a flat area of a circle up to 1500 km radius. To facilitate the work involved, the author advises the production of a semi-circular transparent stencil having points numbered from 0 to 21 - these being the nodes of a polar grid. The points are applied in the equation which takes the following form:

$$Z_{1000}(U_0 t, 0, t) = \sum_{n=1}^{21} (Z_{1000}^{(n)} + Z_{1000}^{(n')}) M_n + \sum_{n=1}^{21} (Z_{500}^{(n)} + Z_{500}^{(n')}) N_n, \quad (3.10)$$

Card 2/4

30V-49-58-6-5/12

Short-Term Forecasting of Non-Zonal/<sup>Altitude</sup> Displacements in the Topography of the Lower and Medium Troposphere.

here:  $Z_{1000}$  = predicted height of 1000 mb surface at a point of the stencil  $x = U_0$ ,  $y = 0$ ,  $t = 1$  (= one day),  $Z_{1000}^{(n)}$  and  $Z_{500}^{(n)}$  = heights of 1000 mb and 500 mb surfaces

as read off from the original chart at stencil points  $n$  and  $n'$  ( $n$  being symmetrical to  $n'$ ),  $M_n$  and  $N_n$  = constants, evaluated for every  $n$  and tabulated. Two examples of the original charts at 1000 mb pressure level and the corresponding prebaratics for the same period as determined from the formula are shown. It is evident that the differences between the charts are very small. The author ends his work with a remark that his method has some theoretical drawbacks (e.g. an assumption of stability of zonal flow) but it can be used with confidence for forecasting the displacements and tendencies of barometric systems in short periods. There are 8 figures, 1 table and 9 references, of which 6 are Soviet and 3 English.

Card 3/4

Short-Term Forecasting of Non-Zonal <sup>Altitude</sup> Displacements in the Topography  
of the Lower and Medium Troposphere. 30V-49-53-6-5/12

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki atmosfery  
(Academy of Sciences USSR, Institute of Physics of the  
Atmosphere)

SUBMITTED: September 20, 1957.

1. Atmosphere--Pressure  
--Mathematical analysis
2. Pressure--Determination
3. Pressure

Card 4/4

S/049/59/000/03/009/019

AUTHOR: Nemchinov, S. V.

TITLE: A Short-Period Forecast of the Atmospheric Pressure  
for the Three-Layer Model of the Atmosphere

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,  
1959, Nr 3, pp 432-444 (USSR)

ABSTRACT: The model of the atmosphere under consideration consists of three levels: 250, 500 and 750 mb. The forecasting period is one to two days. The calculation is based on a solution of a linearized system of equations in hydrothermodynamics (Eq 1.1). An extremum of the vertical velocity at 500 mb is employed to construct the initial closed system of differential equations. The solution is given in analytic form and it is used to deduce prognostic charts showing the absolute topography of isobaric surfaces. The method described was used by N. M. Kireyeva to

Card 1/2

S/049/59/003/03/009/019

A Short-Period Forecast of the Atmospheric Pressure for the  
Three-Layer Model of the Atmosphere

forecast the AT700 charts one day in advance. The forecasts for 18.00 hours on January 12, 1954 (Fig 6) and for 18.00 hours on January 13, 1954 (Fig 8) were based on the situations 24 hours earlier (Figs 4 and 5). The actual AT700 charts obtained on January 12 and 13, 1954 at 18.00 hours are shown in Figs 5 and 7. There are 8 figures, 3 tables and 4 Soviet references.

ASSOCIATION: Akademiya nauk SSSR, Institut prikladnoy geofiziki  
(Ac. Sc. USSR. Institute of Applied Geophysics)

SUBMITTED: April 10, 1958

Card 2/2

AUTHOR: Nemchinov, S.V.

S/049/59/000/12/011/027  
E131/E39.1

TITLE: On Solving the Prognostic Equation of the Atmospheric-  
pressure Field

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,  
1959, Nr 12, pp 1821 - 1830 (USSR)

ABSTRACT: An approximate solution is given of an equation which describes the future state of the atmospheric-pressure field (Eq (1.1)). For this purpose partial derivatives are replaced by finite differences. The resultant system of inhomogeneous differential equations in partial derivatives of two variables with constant coefficients is reduced to canonical form and solved in closed form. The method of solution allows very general representation of stratification of the atmosphere and inclusion of pseudo-adiabatic processes in a real atmosphere. There are 4 Soviet references.

ASSOCIATION: Akademiya nauk SSSR Institut prikladnoy geofiziki  
(Institute of Applied Geophysics of the Ac.Sc.USSR)

SUBMITTED: June 30, 1959

Card 1/1

*Non-Zero*

ON THE SOLUTION OF AN EQUATION TO PREDICT  
THE ATMOSPHERIC PRESSURE FIELD

(Summary)

An approximate solution of an equation describing atmospheric pressure field variations is given. With this in view, partial derivatives on the vertical coordinate are substituted for finite differences on the system of differential equations in partial derivatives. The resulting variables with constant coefficients reduce to the canonical form and are explicitly solved.

With the proposed solution method, it is possible to use in the solution the most general assumptions with regard to atmosphere stratification and take into account the pseudoadiabatic processes present in the real atmosphere.

*2.1. Introduction*  
*2.2. Main results*

Report submitted for the XII General Assembly of the Inst. Union of Geodesy and Geophysics, Helsinki, Finland, 29 July - 6 August 1966.

S/049/60/000/008/014/015  
E201/E191

AUTHOR: Nemchinov, S.V.

TITLE: Forecast of an Atmospheric Pressure Field at the Mean  
Atmospheric Level with Allowance for Large-Scale  
Turbulent Mixing

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,  
1960, No. 8, pp.1271-1276

TEXT: The author begins with the following equation for the calculation of the pressure field at the mean atmospheric pressure level, using the quasi-geostrophic approximation and allowing for large-scale horizontal turbulent mixing:

$$\frac{\partial \Delta H_{cp}}{\partial t} + \frac{g}{\ell} (H_{cp}, \Delta H_{cp}) + \beta \frac{\partial H_{cp}}{\partial x} = k^2 \Delta \Delta H_{cp}, \quad (1.1)$$

where  $H_{cp}$  is the height of the isobaric surface at the mean atmospheric pressure level,  $g$  is the acceleration due to gravity,  $\ell$  is the Coriolis parameter,  $\beta = d\ell/dy$ ,  $k^2$  is the coefficient of horizontal large-scale mixing,  $\Delta$  is given by

Card 1/3



S/049/60/000/008/014/015

E201/E191

Forecast of an Atmospheric Pressure Field at the Mean Atmospheric Level with Allowance for Large-Scale Turbulent Mixing

$$\Delta = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}$$

and the Jacobian is given by

$$(\varphi, \psi) = \frac{\partial \varphi}{\partial x} \frac{\partial \psi}{\partial y} - \frac{\partial \varphi}{\partial y} \frac{\partial \psi}{\partial x}$$

The solution of Eq. (1.1) is obtained in two ways, giving  $H=H_{cp}/h$  where  $h$  is a characteristic change in height of the isobaric surface. It is concluded that the most convenient method of calculation and the effect of allowance for horizontal mixing can be found only after accumulation of sufficient number of experimental observations and comparison with prognostic charts of atmospheric pressure calculated using an electronic computer. The paper is entirely theoretical. There are 2 references: 1 Soviet and 1 English.

Card 2/3

S/049/60/000/008/014/015  
E201/E191

Forecast of an Atmospheric Pressure Field at the Mean Atmospheric  
Level with Allowance for Large-scale Turbulent Mixing

ASSOCIATION: Akademiya nauk SSSR, Institut prikladnoy geofiziki  
(Institute of Applied Geophysics, AS USSR) ✓

SUBMITTED: March 24, 1960

Card 3/3

HEMCHINOV, S.V.

Studying the solution of equations in forecasting the baric  
field of the atmosphere. Izv. AN SSSR. Ser.geofiz. no.11:1635-  
1641 N'60. (MIRA 13:11)

1. AN SSSR, Institut prikladnoy fiziki.  
(Weather forecasting)

YEROMILOV, S.V.

Additional note to the article "Studying the solution of the equation  
used in forecasting the baric field of the atmosphere." Izv. AN  
SSR. Ser. geofiz. no. 3:495-496 Mr '61. (MIRA 14:2)  
(Weather forecasting)

29583  
S/049/61/000/006/013/014  
0218/0306

3.5110 (1114)

AUTHOR: Nemchinov, S.V.

TITLE: A property of Green's function for the boundary value problem in the prognosis of atmospheric pressure distribution

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 6, 1961, 933-941

TEXT: Marchuk and Buleyev reported determining the first time derivative of the height of the isobaric surface which they obtained by solving the equations of thermo-hydrodynamics in the quasi-geostrophic approximation (Ref. 1: Trudy Instituta fiziki atmosfery AN SSSR, no. 2, 1958). The prognosis of the pressure distribution in a baroclinic atmosphere may be reduced to solving the equation (1.1)

$$\frac{\partial}{\partial \xi} \frac{\partial^2}{\partial \xi^2} \frac{\partial}{\partial \xi} \frac{\partial z}{\partial t} + \Delta \frac{\partial z}{\partial t} = F$$

(1.1)

subject to the boundary conditions (A). (See next card).

Card 1/5

29583

S/O49/61/000/006/013/014

0218/b306

A property of Green's...

$$\left[ \zeta^2 \frac{\partial}{\partial \zeta} \frac{\partial z}{\partial t} \right]_{\zeta=0} = 0, \quad \left[ \zeta \frac{\partial}{\partial \zeta} \frac{\partial z}{\partial t} + x \frac{\partial z}{\partial t} \right]_{\zeta=1} = f. \quad (A)$$

In these expressions  $z$  is the height of the isobaric surface, the function  $F$  describes the wind transport and temperature advection, the function  $f$  represents the temperature advection at the earth's surface,  $\zeta$  is the reduced height,

$m^2 = RT/\zeta^2$  and  $\Delta$  is the Laplace operator in  $x$  and  $y$ . If it is assumed that the parameter  $m^2$  in (1.1) can be replaced by an average value

$m_{av}^2$  for the entire atmosphere, then one can introduce a length  $L$  defined ✓

by  $L^2 = m_{av}^2 = \frac{RT_{av}}{\zeta_{av}^2}$ ,  $r = LR_1$ , and hence (1.1) assumes the form Eq.

$$(1.2) \quad \frac{\partial}{\partial \zeta} \left( \zeta^2 \frac{\partial}{\partial \zeta} \frac{\partial z}{\partial t} \right) + \Delta_1 \frac{\partial z}{\partial t} = m_{cp}^2 F, \quad (1.2) \quad \text{where } \Delta_1 \text{ is the}$$

Laplace operator, involving the dimensionless variables  $x_1$  and  $y_1$ . It was shown (Ref. 1: Op. cit.) that Green's function for (1.2) is of the

Card 2/5

29583

S/049/61/000/006/013/014

D218/D306

A property of Green's ...

form Eq. (1.3) 
$$M(\zeta, \zeta', r_1) = \frac{1}{2\sqrt{\zeta\zeta'}} \left[ \zeta \left( \frac{\zeta'}{\zeta}, r_1 \right) + \zeta \left( \frac{\zeta}{\zeta'}, r_1 \right) \right] + \left( \frac{1}{2} - \alpha \right) (\zeta\zeta')^{-1/2} \int_0^{\zeta\zeta'} u^{1/2-1} \zeta(u, r_1) du, \quad (1.3)$$

Using the substitution  $u = e^{-v}$ , the integral in the expression may be reduced to the form Eq. (1.4)

$$Y = \frac{de^{-ad}}{\sqrt{\zeta\zeta'}} \int_0^\infty \exp \left[ dv - \frac{1}{2} \sqrt{v^2 + r_1^2} \right] \frac{dv}{\sqrt{v^2 + r_1^2}} = \frac{de^{-ad}}{\sqrt{\zeta\zeta'}} X(r_1, u, \alpha), \quad (1.4) \quad \text{where}$$

$$d = 1/2 - \alpha > 0, \quad a = \ln \frac{1}{\zeta\zeta'} > 0.$$

(B). The first section of the present paper is concerned with investigating the properties of Green's function given by (1.3). This function consists of two parts, namely, the expression in the brackets which can be expressed in terms of elementary functions, and the improper integral given by

Card 3/5

29583

A property of Green's...

S/049/61/000/006/043/014  
D218/D306

(1.4). The present author shows that this integral may be transformed so that it reads Eq. (2.14)

$$Y(a, r_1, \alpha) = \frac{2d}{\pi \sqrt{\frac{1}{\epsilon_0^2}}} \int_0^\infty (a \cos yd + y \sin yd) K_0(\kappa \sqrt{y^2 + b^2}) \frac{dy}{a^2 + y^2}, \quad (2.14)$$

$$a = \ln \frac{1}{\epsilon_0^2} \geq 0, \quad d = 1/2 - \alpha, \quad \kappa = \sqrt{\alpha(1-\alpha)}, \quad b = \sqrt{\ln^2 \frac{1}{\epsilon_0^2} + r_1^2} \geq 0$$

where Eq. (2.12)  $\int_0^\infty \frac{\exp(-\kappa \sqrt{y^2(x^2+1) + b^2})}{\sqrt{y^2(x^2+1) + b^2}} dx = \frac{1}{y} K_0(\kappa \sqrt{y^2 + b^2}). \quad (2.12) \quad \text{and}$

$y = z/(1-\alpha)$  ( $z - \frac{1}{2} = -d \leq z \leq \infty$ ). It is shown that the above Green's function is only defined for  $\alpha \neq 0$  (i.e.  $\epsilon_0 \neq 0$ ). This means that the term  $\frac{z}{t}$  in (1.1) cannot be neglected. The next section of the paper is concerned with the propagation of fast waves generated in

Card 4/5



29583

S 049/61 000 006 013 014  
0218 0306

A property of Green's ...

a barotropic atmosphere when the geostrophic balance between the wind and pressure fields is disturbed. It is shown that  $\alpha \rightarrow 0$  in (2.14) is equivalent to the simultaneous condition  $m^2 \rightarrow 0$ . The boundary value problem (1.2) has no solution when  $\alpha = 0$  since the improper integral (2.14) is then found to diverge. This result holds when the functions  $m^2$ ,  $k$  and  $l$  are arbitrary, continuous functions which are bounded at infinity. If, however, these functions are constrained by certain additional conditions then the boundary value problem can also be solved for  $\alpha = 0$ . However, the condition  $\alpha = 0$  is suggested as a simple and reliable means of ensuring that the solution of (1.2) can be used for prognosis of the pressure field in the atmosphere. There are 8 Soviet-bloc references.

ASSOCIATION

Akademika nauk SSSR, Institut prikladnoy geofiziki  
(Academy of Sciences USSR, Institute of Applied Geophysics)

SUBMITTED:

May 23, 1960

Card 5 5

NEMCHINOV, S.V.

Forecasting of atmospheric pressure and wind fields. Izv. AN SSSR.  
Ser. geofiz. no.7:1066-1077 J1 '61. (MIRA 14:6)

1. Akademiya nauk SSSR, Institut prikladnoy geofiziki.  
(Weather forecasting)

40493

S/208/62/002/003/004/011  
1040/1219

AUTHOR Nemchinov, S. V. (Moscow)

TITLE On the solution of boundary value problems for elliptic partial differential equations by the method of nets

PERIODICAL Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 2, no. 3, 1962, 418-436

TEXT The method is illustrated on the Helmholtz equation  $\frac{\partial^2 \phi}{\partial x^2} + \frac{\partial^2 \phi}{\partial y^2} - (k^2 - \lambda)\phi = f(x, y)$  with all the combinations of Dirichlet and Neumann boundary conditions on the sides of the rectangle  $0 \leq x \leq a$ ,  $0 \leq y \leq b$ . The segment  $(0, b)$  is divided into intervals  $[y_i, y_{i+1}]$  ( $i = 0, \dots, n$ ) and the partial derivatives  $\partial^2 \phi / \partial y^2$  are replaced by the corresponding second order central differences. The system of ordinary differential equations obtained is reduced to canonical form and again differences are substituted for derivatives, dividing now the segment  $(0, a)$  into  $r$  parts. The passage from the solution of the last system to the values of  $\phi(x, y)$  at the points  $(x_2, y_2)$  of the grid is carried out with the aid of the eigenvalues of the corresponding boundary value problem for the difference equation. These eigenvalues are given for the various boundary value problems considered. The method can also be applied to the following equations

$$\frac{\partial}{\partial x} \left( a(x) \frac{\partial \phi}{\partial x} \right) + \frac{\partial^2 \phi}{\partial y^2} - (k^2(x) - \lambda)\phi = f(x, y),$$

Card 1/2

S/208/62/002/003 004.011  
1040/1219

On the solution of...

$$\frac{\partial^2 \phi}{\partial x^2} + \frac{\partial}{\partial y} \left( b(y) \frac{\partial \phi}{\partial y} \right) - (k^2(y) - \lambda) \phi = f(x, y)$$

The number of arithmetic operations needed for this method is approximately  $2n(2nr + 3r + 2)$

SUBMITTED November 28, 1961

Card 2/2

NEMCHINOV, S.V.

Boundary problems in predicting the pressure field of the atmosphere.  
Trudy TSIP no.102:64-70 '62.  
(Meteorology) (MIPA 15:9)

AUTHOR:

Nemchinov, S. V.

S/020/62/146/006/003/016  
B172/B186

TITLE:

On the solution of boundary value problems for partial differential equations with periodic boundary conditions by means of a non-iterational method of difference

PERIODICAL:

Akademiya nauk SSSR. Doklady, v. 146, no. 6, 1962, 1263-1266

TEXT: A previous study by this author (Vychislitel'n. matem. i. matem. fiz., no. 3(1962)) gave a non-iterational method of difference for solving boundary value problems of the Helmholtz equation in a rectangle. The author shows how this process can be expanded to the case of a circular domain of solution. The introduction of polar coordinates still results in a rectangular domain of solution, but certain conditions of periodicity must be satisfied. The expanded method is described for the Dirichlet and the Neumann problem.

ASSOCIATION: Vychislitel'nyy meteorologicheskii tsentr (Meteorological Computer Center)

Card 1/2

On the solution of boundary...

S/020/62/146/006/003/016  
B172/B186

PRESENTED: May 24, 1962, by A. A. Dorodnitsyn, Academician

SUBMITTED: May 19, 1962

Card 2/2

NEMCHINOV, S.V., MUSAYEKYAN, S.A., SADOV, V.P.

"Some aspects on the determination of the field of stream function according to the field of vertical motion in the atmosphere."

Report submitted to the Intl. Symp. on <sup>NV</sup>Numerical Weather Prediction,  
Oslo, Norway 11-16 March 1963



ARKHANGEL'SKIY, V.L.; BIRMAN, B.A.; ZAKHAROV, V.N.; MARGOLIN, L.M.;  
NEMCHINOV, S.V.; PASHKOV, Yu.S.

Brief news. Meteor. i gidrol. no.8:63-64 Ag '63. (MIRA 16:10)

L 8577-66 EWT(1)/ECC GH  
ACC NR: AT5008050

SOURCE CODE: UR/0000/84/000/000/0029/0035

AUTHOR: Sedukhov, V. P.; Kanchinov, S. V.

ORG: none

TITLE: Short-range hydrodynamic forecasting of meteorological elements on several atmospheric levels

SOURCE: Symposium po chislennym metodam prognoza pogody. Moscow, 1963. Trudy. Leningrad, Gidrometeoizdat, 1964, 29-35

TOPIC TAGS: weather forecasting, geostrophic wind, atmospheric pressure, mathematic method, mathematic prediction, approximation calculation

ABSTRACT: A numerical method is proposed for a 24-hour forecast of the barometric field, wind and vertical airflow for a limited territory. The method is based on solving a system of "primitive" equations. Forecast equations for determining the horizontal wind components are constructed from two equations of motion recorded in the isobaric coordinate system. A system of two equations is derived by solving these equations for the derivative with respect to time and moving the term with the Coriolis parameter to the left. This system may be reduced to an equation of the first order with respect to time for complex velocity. Two equations for the two horizontal wind components are derived by writing out the solution for this last equation

Card 1/2

L 8577-66

ACC NR: AT5008050

and separating out the real and imaginary parts. The equation for finding the pressure is derived from the heat flux equation in which temperature is eliminated by a static equation, and divergence is eliminated by using the equations derived for the horizontal wind components. Boundary conditions are given for the pressure equation. An equation is also derived for the vertical component of velocity. These equations are all approximated by finite-difference formulas. Experimental calculations using the proposed method indicate that the virtual boundary conditions at the lateral edges of the region have a strong distorting effect on the solutions, leading to parasitic waves. This situation may be solved by extending the region to the equator, or to the entire globe; or by refining the boundary conditions for the small model. If the model is geostrophic, then the "edge errors" will be reduced to a minimum. However, there will still be a parasitic effect due to adding the geostrophic wind to the full wind. A similar effect is observed when the geostrophic wind is used for the initial data. Adaptation of the geostrophic wind to the calculated wind causes a mottled effect in the divergence field and consequently in the vertical airflow during the initial calculations. After a certain period of time, these disturbances are attenuated and the fields calculated for the various elements are found to agree. Orig. art. has: 1 figure, 2 tables, 15 formulas.

SUB CODE: ES,NA/

SUBM DATE: 08Oct64/

ORIG REF: 003/

OTH REF: 000

Card 2/2 (11)

NEMCHINOV, Vasil'y Sergeyevich, akademik; GLYAZER, L.S., red.

[Further improvement of planning and administration of  
the national economy] O dal'neishem sovershenstvovanii  
planirovaniia i upravleniia narodnykh khoziaistvom.

2. izd. Moskva, Ekonomika, 1965. 73 p. (Obsuzhdaem  
problemy sovershenstvovaniia planirovaniia, no.11)

(MIRA 18:5)

BOCHIN, N.A.; BOLAEV, A.S.; VLADIMIROV, A.M.; SAICHIYEV, M.I.; YEFREMOV, P.V.;  
BAKHAROV, V.N.; MARGOLIN, I.M.; NENTSEV, A.A.; KASHKIN, Y.S.;  
SOVERCHAYEV, V.A.; FELDER, V.G.

Brief news. Meteor. Zhurnal. no.9:61-64, S. 195.

(VINA 12:8)

L 16989-66 EWT(1)/FCC GW  
 ACC NR: A6001512 (N) SOURCE CODE: UR/0384/65/000/006/0056/0058  
 AUTHOR: Nemchinov, S. V. (Candidate of physico-mathematical sciences) 43  
 ORG: none 56  
 TITLE: The dynamics of large-scale atmospheric movements / International Symposium  
 in Moscow, 23-30 June, 1965; International Committee on Dynamic Meteorology 12, 44, 55  
 SOURCE: Izvlya i Vseleennaya, no. 6, 1965, 56-58  
 TOPIC TAGS: atmospheric movement, computer programming, weather forecasting,  
 dynamic meteorology  
 ABSTRACT: This paper points out the importance of computerising in modern dynamic  
 meteorology, and it emphasises the need of improved techniques in computer  
 programming. Parameters that need careful evaluation for such programming are:  
 kinds of atmospheric movements that determine weather, and their duration;  
 reliability of predicting atmospheric state; reliability of long-range forecasting;  
 possibility of partial prediction in absence of complete information; time  
 interval of information required for reliable prediction; essential factors  
 necessary to determining the basic aspects of atmospheric circulation. Weather  
 Card 1/2 2-

L 16989-66

ACC NR: AP600152

satellites provide very useful information, but a certain time interval is required for mathematical treatment and reliable presentation of a world model. The Symposium of the International Committee on Dynamic Meteorology was attended by scientists from USSR, U.S.A., England, Japan, India, Norway, East Germany, Bulgaria, Sweden, West Germany, Finland, France, Yugoslavia, Hungary, Canada, Australia, Greece, Spain, and several other countries. Reports covered the following principal fields: 1) methods of computer use to solve problems in dynamics of the atmosphere, 2) theory of long-range forecasting and of preparing models of general atmospheric circulation, 3) questions on simultaneous observation of atmospheric conditions on a global scale, 4) physical and statistical aspects of investigating large-scale atmospheric processes, 5) interaction of atmosphere and oceans, humidity and cloudiness, and the energy of atmospheric processes, 6) empirical investigation of general atmospheric circulation. Speakers included G. I. Marchuk (USSR), A. M. Obukhov and A. S. Monin (USSR), M. I. Yudin, Ye. M. Blinov (USSR), L. S. Gandin, G. Charny (U.S.A.), E. N. Laurence (U.S.A.), I. Mintz (U.S.A.), I. A. Kibel' (USSR), W. Böhm and K. Lehtake (West Berlin), and R. Reed (U.S.A.). The next meeting will be held in Switzerland in 1967 in conjunction with the Assembly of the International Geodetic and Geophysical Union.

SUB CODE: Ch/

SUM DATE: none

Card 2/2 mgs

01848-67 EWI(d) IJP(c)

ACC NR: AR6013772

SOURCE CODE: UR/0044/65/000/010/B087/B087

AUTHOR: Nemchinov, S. V.; Libov, A. S.

TITLE: Utilization of differential-difference identities for the solution by a non-iterative method of boundary problem nets for the Helmholtz equation with enhanced precision

SOURCE: Ref. zh. Matematika. Abs. 10B411

REF SOURCE: Nauchn. tr. Tashkentsk. un-t, vyp. 259, 1964, 189-203

TOPIC TAGS: partial differential equation, numeric solution, difference method, *boundary value problem*

ABSTRACT: Boundary problems are considered for the Helmholtz equation

$$\frac{\partial^2 e}{\partial x^2} + \frac{\partial^2 e}{\partial y^2} - (k^2 - \lambda)e = f(x, y) \quad (1)$$

in the rectangle  $0 \leq x \leq a$ ,  $0 \leq y \leq b$ , on the sides of which the boundary conditions of Dirichlet and Neumann can be imposed independently. 3 boundary problems corresponding to the three possible boundary conditions on  $y$  and  $x$  are formulated. A method of solution is proposed, based upon the use of properties of specific matrices (Ref. zh. Mat. 1964, 4B560), permitting in the solution of boundary problems in the whole by the net

Card 1/2

UDC 518:517.944/.947



ACC NR: AR6013772

methods, the use, on the variable  $y$ , of the method of characteristic lines. The character of the approximation of the partial derivatives requires a precision of the order of  $h^5$  to  $h^6$ , where  $h$  is the net step. In the approximation of the derivatives, the differential-difference identities of M. Slobodyanskiy (for partial derivatives of the second order) and of Sh.E. Mikeladze (for ordinary derivatives) were used. Given boundary conditions are modeled by the finite difference operator guaranteeing the highest order of approximation to the boundary problem at hand. Expressions for the eigenvalues are introduced for the equation (1) for the solution of the above boundary problems on the rectangle's network points. It is noted that numeric examples confirm the unique resolution of the algorithm of the reversion of the net operator, approximating the boundary problem for (1), and show the practicality of the described method. Bibliography of 4 titles. I. Shelikhova Translation of abstract

SUB CODE: 12

Card 2/2 LC

ACC NR: AT7002807

SOURCE CODE: UR/0000/66/000/000/0005/0017

AUTHOR: Nemchinov, S. V.

ORG: none

TITLE: On the problem of forecasting surface pressure

SOURCE: AN UzSSR. Institut matematiki. Resheniye uravneniy gidrotermodynamiki primenitel'no k zadacham meteorologii (Solution of equations in hydrothermodynamics applied to problems in meteorology) Tashkent, Izd-vo FAN UzSSR, 1966, 5-17

TOPIC TAGS: atmospheric model, weather forecasting, mathematic model, atmospheric pressure, surface pressure, atmospheric geopotential, boundary value problem, free atmosphere

ABSTRACT: The basic premises of a work by N. I. Buleyev and G. I. Marchuk (O dinamike krupnomasshtabnykh atmosferykh protsessov, Trudy IFA AN SSSR, No. 2, 1958) are examined. To calculate the pressure trend in a baroclinic atmosphere, the author uses the quasi-static nature of the atmosphere's vertical structure, the geostrophic nature of the large-scale horizontal movements, and the adiabatic nature of processes during at least one day. In the system of coordinates  $x, y, \zeta$ , the trend of the isobaric surface  $q = \partial H / \partial t$  at the initial moment satisfies the boundary value problem:

Card 1/2

ACC NR: AT7002807

$$L(q) = F$$

$$L = \frac{\partial}{\partial \zeta} \left( \zeta^2 \frac{\partial}{\partial \zeta} + k^2 \left( \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} \right) \right)$$

This problem has a unique bounded solution when the functions  $k^2$  and  $\alpha$  are constant and positive and  $0 < \alpha < 1$ , where  $\alpha = \frac{\gamma_a - \gamma_R}{g} \zeta$  and  $k^2 = \alpha RT$ . If the boundary value problem gives entirely satisfactory values of  $q$  for a free atmosphere, then these same values for the surface pressure will be a priori linked with the boundary condition when the reduced pressure  $\zeta = 1$ . Four additional boundary value problems are examined. The effectiveness of the method of mathematical modeling in question can be determined only by practical application. Orig. art. has: 13 formulas.

SUB CODE: 04, 12/ SUBM DATE: 26May66/ ORIG REF: 007

Card 2/2

L 5269-66 ENT(1)/EWA(h)

ACC NR: AP5026202

SOURCE CODE: UR/0142/65/008/004/0489/0493

AUTHOR: Karmazinskiy, A. N.; Nemchinov, V. M.

ORG: none

TITLE: Unitron counter

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 4, 1965, 489-493

TOPIC TAGS: counter, adder, field effect transistor, direct coupled transistor logic

ABSTRACT: An experimental direct-coupled transistor logic counter using unitrons (field-effect transistors) is described. A block diagram is given in Fig. 1, and

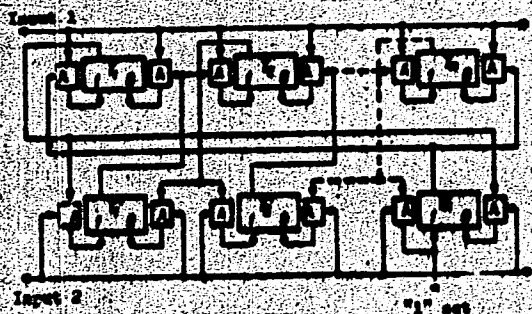


Fig. 1. Unitron ring counter

A - AND gates; T - triggers.

Card 1/3

UDC: 621.382.233

6901 1190

L 5269-65

ACC NR: AP5026202

Fig. 2 is a schematic for two digits of a ring counter. In the absence of storage

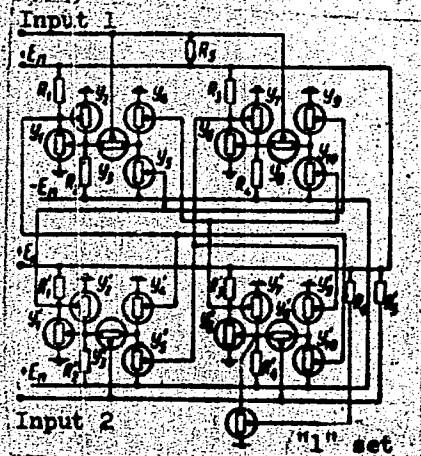


Fig. 2. Two digits of ring counter

elements, the delay function in counting is provided by auxiliary trigger FET's ( $T'_1, T'_2, \dots$  in Fig. 1). Tabulated results are given of the range of tolerance in circuit parameters for a counter operating at 18C and 40C. Operation was reliable over a 15% variation in supply voltage and a 10% variation in resistor values. Speed

Card 2/3

I. 5269-66

ACC NR: AF5026202

of operation was a limiting factor, being in this case only 25 kc. An advantage cited is the low power drain, due to the fact that in the unitron counter only two triggers are on at any given moment; the tested counter required only 40 mw. Orig. art. has: 5 tables and 7 figures. [SH]

SUB CODE: DP, EC/ SUBM DATE: 22Oct64/ ORIG REF: 002/ ATD PRESS: 4/37

PC  
Card 3/3

NEUCHINOV, V.P.

Early period in the development of boring machinery. Vop.ist.est.1  
tekh. no.9:143-149 '60. (MIRA 13:7)  
(Boring machinery)

NEMCHINOV, Y.P.

Development of methods for breaking up coal by means of explosives.  
Trudy Inst.ist.est.i tekhn. 33:98-122 '60. (MIRA 13:8)  
(Coal mines and mining--Explosives)



NEMCHINOV, Vladimir Petrovich; SHUKHARDIN, S.V., otv. red.;  
RISKINA-RYSKO, S.Ya., red.

[Expansion of coal mining techniques; effect of technical  
progress on the development of methods of coal breaking  
in mines] Razvitie tekhniki dobychi uгля; vlianie tekhnicheskogo progressa na razvitie sposobov razrusheniia uгля v shakhtakh. Moskva, Nauka, 1965. 212 p.

(MIRA 18:12)

See 107, 1. 2.

On the Statistical

of the Statistical

MEMORANDUM, V. S.

"Experience in Classifying Peasant Farms (Opyt klassifikatsii krest'yan'skikh khoz-yaistv)", 1928

NENCHINOV, V. S.

"Structure of Great Production (Struktura Bol'shogo proizvoda)", 1971

NEMCHINOV, V. S.

"Selective or Sampling Measurements of Crops (Vyborechnyye izmereniya troshnaya)",  
1932.

MENCHINOV, V. S.

"On the Problem of Methods for Measuring Agrotechnical Soil Fertility Factors  
(K voprosu o metodakh izmereniya agrotekhnicheskikh faktorov prozravnosti)", 1961

NERCHINOV, V. S.

"Agricultural Statistics with Principles of the General Theory (Sel'skookho-  
yaystvennaya statistika s osnovami obshchey teorii)", 1945.

DOLZHANSKIY, L.D.; KOHRIN, B., otv.red.; NEMCHINOV, V.S., prof., red.;  
PETERBURGSKIY, A.V., dotsent; LIL'YE, A., tekhn.red.

[Two forage crop yields in one year] Dva uroshais kormovykh  
kul'tur v god. Pod red. V.S.Nemchinova i A.V.Peterburgskogo.  
Moskva, Mosk.rabochii, 1946. 47 p. (MIRA 13:12)

1. Upravlyayushchiy uchebno-opytныy khozyaystvom "Terma" Sel'sko-  
khozyaystvennoy akademii im. Timiryazeva (for Dolzhanskiy).  
(Forage plants)



NEMCHINOV, V. S.

"Chebyshev's Polynomials and Mathematical Statistics (Polinomy Chebysheva i matematicheskaya statistika)", 1946

MECHINOV, V. S.

"Criteria of Distribution of Livestock Raising and Its Branches (O kriteriyakh razmeshcheniya kul'tur i otrasley zhivotnovodstva)", 1947

NEMCHINOV, V. S.

11031

USSR/Agriculture - General 4301.0100 Jan/Feb 1947

"Concerning Tests on the Distribution of Cultures and Cattle Breeding," V. S. Nemchinov, 12 pp

"Is Ak Bank Otdel Khon 1 Prava" No 1

Theoretical discussion of factors in the rational distribution of agriculture, such as production of the maximum variety of food, maximum labor production and soil exploitation, differential factors including concentration of agricultural products close to or at a distance from consumer, and structure-creating forces such as crop rotation and cattle breeding.

10

11031

NEMCHINOV, V. S.

Member, Academy of Sciences

Soviet Economy During World War II, International Publishers, Inc., 1949

Soviet Source: No Kazakhstanskaya Pravda  
Alma-Ata, March 1948

Abstracted in USAF "Treasure Island " Report No. 23893, in file of  
Library of Congress, Air Information Division

NEMCHINOV, <sup>[v.s.]</sup>~~for~~ ..

"On Criteria of Distribution of Crops and Branches of  
Cattle Breeding"

Current Digest of the Soviet Press, Vol. 1  
No. 12, 1949, page 15-16 (In  Library)

MEUCHINOV, V. S.

"Statistical Science in the Works of V.I. Lenin (oprosy statisticheskoy nauki  
v rabotakh V.I. Lenina)", 1949

MENCHINOV, V. S.

"Statistical Methods of Analysis of Economic Phenomena (Statisticheskiye metody analiza khozyaystvennykh yavlenii)", 1950

NEMCHINOV, V. S.

"Orthogonal Polynomials and Mathematical Statistics (Ortogonal'nye polinomy  
i matematicheskaya statistika)", 1951



MEMCHINOV, V. S.

"Statistics as a Science (Statistika kak nauka)", 1952

IVANCHENKO, A.A.; NERMCHINOV, V.S., akademik, glavnyy redaktor; LETUNOV, P.A.,  
kandidat geologo-mineralogicheskikh nauk, otvetstvennyy redaktor.

[Cultivation practices and widespread mechanization in cotton  
growing under the grassland system of agriculture] Agrotekhnika i  
kompleksnaya mekhanizatsiya v khlopkovodstve pri travopol'noi  
sisteme zemledeliya. Moskva, Izd-vo Akademii nauk SSSR, 1953. 220 p.  
(MIRA 7:4)

(Cotton growing and manufacture) (Agricultural machinery)

MECHINOV, V. S.

"Characteristics of the development of the Productive Forces of Agriculture under Socialism (Osobennosti razvitiya proizvoditel'nykh sil sel'skogo khozyaystva pri sotsializme)", 1953.

*NEMCHINOV V.S.*

YUNATOV, A.A.; NEMCHINOV, V.S., akademik, glavnyy redaktor; LAVRENKO, Ye.M.,  
otvetstvennyy redaktor vypuska; SHUL'ZHENKO, I.F.; GOLOVIN, M.I.,  
redaktor isdatel'stva; ARONS, R.A., tekhnicheskiy redaktor.

Forage plants of pastures and meadows of the Mongolian People's  
Republic. Trudy Mong.kom. no.56:3-351 '54. (MLRA 7:11)

1. Chlen-korrespondent Akademii nauk SSSR. (for Lavrenko)  
(Mongolia--Forage plants) (Forage plants--Mongolia)

NEMCHINOV, V.S.

Contemporary mathematical statistics and the Chebyshev series.  
Uch.zap.po stat. 1:240-252 '55. (MLRA 9:11)  
(Mathematical statistics)  
(Chebyshev, Pafnutii L'vovich, 1821-1894)

IVASHKIN, V.M.; ~~NEMCHINOV~~, V.S., akademik, redaktor; LAVRENKO, Ye.M.,  
redaktor; ~~SHUL'ZHENKO~~, I.P., redaktor; SKRYABIN, K.I., akademik,  
redaktor; PETROV, A.M., redaktor; ALEKSEYEVA, T.V., tekhnicheskii  
redaktor.

Helminths of farm animals in the Mongolian People's Republic. Trudy  
Mong.kom. no.68:3-213 '55. (MLRA 9:3)

1. Chlen-korrespondent AN SSSR (for Lavrenko).  
(Parasites--Domestic animals)(Mongolia--Worms, Intestinal and para-  
sitic)

TYURIN, I.V., akademik, otvetstvennyy redaktor; MENCHINOV, V.S., akademik, otvetstvennyy redaktor; MARKOV, V.Ya., redaktor izdatel'stva; MAKUNII, Ye.V., tekhnicheskiiy redaktor

[Utilisation of virgin and waste lands during 1954; proceedings of a conference, February 21-26, 1955] Osvoenie tselinnykh i salesnykh zemel' v 1954 godu; materialy soveshchaniia, 21-26 fevralia 1955 g. Moskva, Izd-vo Akademii nauk SSSR, 1956. 385 p. (MLRA 10:1)

1. Soveshchaniye po itogam i perspektivam nauchno-issledovatel'skikh rabot v oblasti osvoyeniya tselinnykh zemel'.  
(Reclamation of land)

NYC 100/100, 100  
NEMCHINOV, V.S., akademik.

Natural and economic conditions of Kustanay Province as a basis for  
the specialization and comprehensive development of its economy. Vest.  
AN Kazakh. SSR 13 no.7:12-23 J1 '57. (MLRA 10:9)  
(Kustanay Province--Natural resources)



NEMCHINOV, V.S., akademik.

At the International Congress of Sociologists. Vest.AN SSSR 26  
no.12:55-61 D '56. (MIRA 10:1)  
(Amsterdam--Sociology--Congresses)

NEMCHINOV, Y. S.

BYARSKY, A. U.

2-4-2/7

None Given

The All-Union Conference of Statisticians (Vsesoyuznoye  
soveshchaniye statistikov)

Vestnik Statistiki, 1957, # 4, pp 12 - 49 (USSR)

**ABSTRACT:** By order of the Government, the USSR TsSU (Central Statistical Administration attached to the Council of Ministers) held an All-Union Conference of Statisticians in Moscow from 4-8 June 1957, in which more than 650 persons participated. V.M. Starovskiy, Chief of the USSR TsSU, reported on the first subject on the agenda: "Practical and scientific problems of statistics arising from the decisions of the XX KPSS February Plenum concerning the further improvement in organizing the administration of industry and construction trades". The main problem before the Soviet state statistics is presently, to ensure the development of statistics primarily in industry and the

# Conference of Statisticians

2-1-2/1

in 1956. A continuation in popularizing statistical data and in furnishing scientific institutions with statistical material is regarded as one of the most important duties of the TsSU.

The reporter mentioned a conference held by the Moscow Economic-Statistical Institute (Moskovskiy ekonomiko-statisticheskii institut) on questions of statistical methodology in studying the productivity of labor. It lasted from 24 - 27 December 1956, with a participation of 390 persons.

Favorable results were achieved in the collaboration of the TsSU with the Institute of Economics of the USSR Academy of Sciences, the Scientific Conjuncture Research Institute of the Ministry of Foreign Trade, the Nutrition Institute of the USSR Academy of Medical Science, and with other scientific organizations. An example of fruitful cooperation was seen in the October 1956 conference of statisticians of countries which are partners in the Council of Mutual Economic Assistance, where census questions were discussed.

The report of V.M. Starovskiy was followed by debates in which a number of persons participated. B.T. Kolpakov, Chief of the RSFSR Statistical Administration, stated that it was necessary to increase sharply the standard of economic work

Card 3/7

The All-Union Conference of Statisticians

2/12/77

of the statistical administrations and of the district and city inspection offices. Professor V.S. Novikov of the Moscow Institute of Economics and Statistics dealt with the question of

records. Doctor of Economics, A. I. B. [unclear] Moscow Institute of Economics and Statistics urged that the level of work of all the TsSU offices should be raised considerably. M. S. Markin, Chief of Ukrainian SSR Statistical Administration, stated that 11 administrative economic districts are being established in the Ukraine. The established Sovnarkhozes are large economic productive associations. Academician V. B. Nemchinov spoke about mechanization in the processing of statistical materials. While giving his approval of analytical computing machines, he recommends that electronic computers be introduced in the large economic districts and centers of the USSR Republics. He proposed that an Institute of Statistical Methodology be established and attached to the TsSU and the USSR Academy of Sciences, and that an All-Union Statistical Society

Card 4/7

The All-Union Conference of Statisticians

2-4-2/7

be founded. L.N. Volodarskiy, Deputy Chief of the TsSU, V.V. Doroshenko, Chief of the Statistical Administration, Mogilev Oblast; V.P. Perepelkin, Chief of the planning section of a machine construction plant; V.I. Pereslegin, Chief of Book-keeping and Accounting Administration of the USSR Finance Ministry; N.V. Tsogoyev, Chief of the Stavropol' Krai Statistical Administration, and T.U. Uvashev, Chief of the Kazakh SSR Statistical Administration; participated in further discussions. T.V. Ryabushkin, Chief of the Statistical Section, Institute of Economics of the USSR Academy of Sciences, welcomes the actions directed toward the development of a system of centralized state statistics. Academician S.G. Strumilin, considering Soviet statistics as the best in the world, indicates a number of deficiencies especially in the field of agricultural statistics. V.E. Ovsienko, Director of the Moscow Institute of Economics and Statistics, dealt with the question of training cadres for mechanization of accounting and statistical work. The article mentions a number of other scientists who participated in the debate and summarizes the reporter's concluding speech. The resolution adopted by the Conference thereafter aims at a substantial improvement in the management of the

Card 5/7

The All-Union Conference of Statisticians

2-4-2/7

building trade and at a removal of the numerous departmental barriers. The reconstruction of the administration of industry and building trade on territorial principles will create the necessary conditions for eliminating superfluous recording and accounting.

The resolution itself is broken up into 5 parts. The first part deals with the centralization of recording and statistics which will eliminate parallelism, and considerably reduce the recording system.

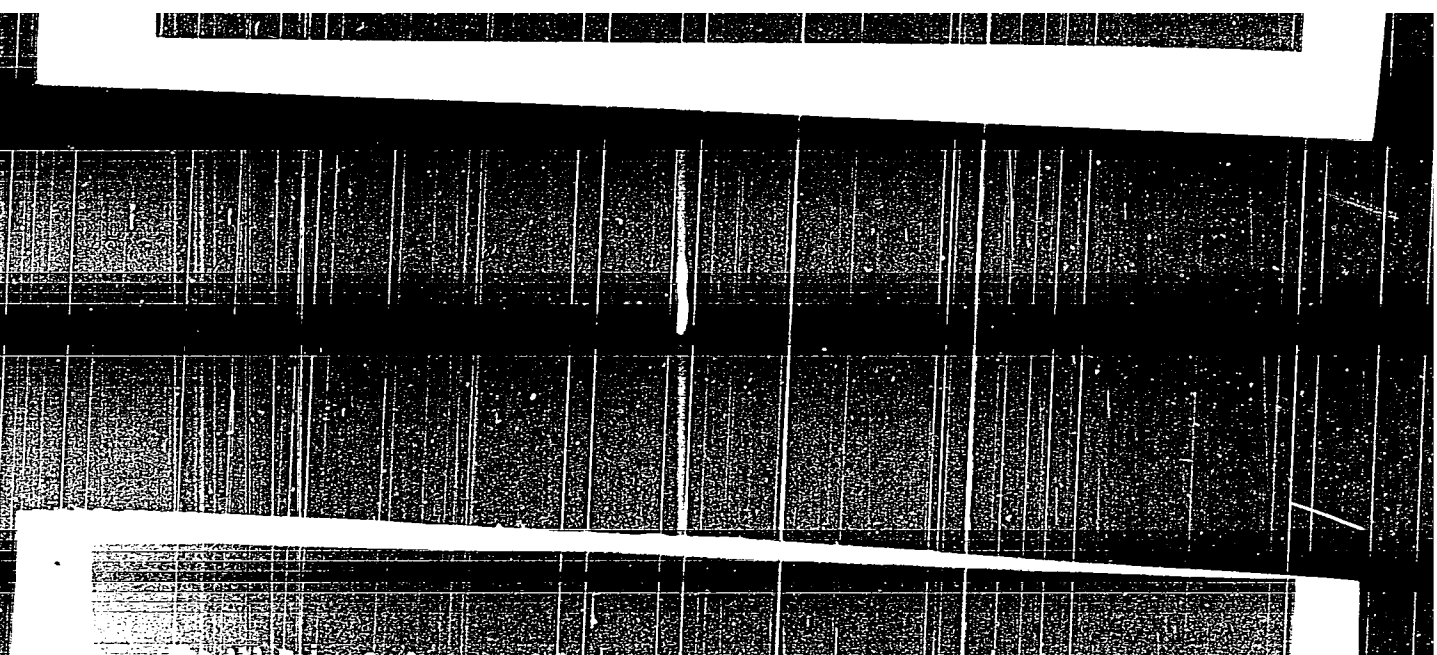
The second part deals with the simplification in recording and accounting, the mechanization of the statistical work and computer stations.

The third part emphasizes the improvement of the analysis of the statistical material. It is also recommended that accounting balances of the income and expenditures of the population, of labor, of production and distribution of the different kinds of production be compiled regularly on a territorial basis.

Part four of the resolution deals with the further development of statistical science and the improvement of methodological work on statistics. Among the problems which

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001136510010-3



APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001136510010-3"



participation of scientific institutions in solving problems of statistics. The establishment of an All-Union scientific-research institute on statistics is also demanded. It requests that the USSR Academy of Sciences and the TsSU create an All-Union Statistical Society as an organization of USSR statisticians, that a bulletin containing the results of statistical works be published, that the journal "Vestnik Statistiki" be issued on a monthly basis instead of bimonthly, and that the printing of statistical literature be increased.

The last part deals with the necessity of training personnel for mechanization of accounting and statistical work.

AVAILABLE: Library of Congress

Case 7/7

HEMCHINOV, V.S., akademik.

Soviet-Chinese scientific cooperation (Results of the first session of the United Scientific Council of the Amur and Heilungchian Expeditions on the Amur problem). Vest. AN SSSR 27 no.6:62-66 Je '57.

(MLRA 10:7)

(Russia--Relations (General) with China)  
(China--Relations (General) with Russia)  
(Amur River)

: AUTHOR: Nemchinov, V. S., Academician

30-12-13/ 5

TITLE: Session of the International Statistical Institute  
(Na sessii Mezhdunarodnogo statisticheskogo instituta).

PERIODICAL: Vestnik AN SSSR, 1957, Vol. 27, Nr 12, pp. 52-55 (USSR)

ABSTRACT: The delegation of Soviet statisticians consisting of the Corresponding Member of the AN USSR M. V. Itukha, the head of the statistical sector at the Institute for Economics, of the AN USSR T. B. Ryabushkin, and the author of this article, took part in the 30. session of the International Statistical Institute at Stockholm in the time from August 8 to August 15. The session was attended by more than 500 participants from 48 countries of the world. The largest number of delegates were sent from Sweden (134), followed by the U.S.A. (73), England (55), France (46) the German Federal Republic (40), Holland (33), Italy (28), and Norway (25). A total of 30 delegates was sent by Asiatic countries, while the socialist countries of Europe sent 27 delegates. The Peoples' republics of Asia were not represented at all. The program was very voluminous and manifold. 128 scientific lectures were held, among them 14 by delegates from socialist countries. Work was carried out in principle in 20 sections (with the exception

Card 1/ 4

Session of the International Statistical Institute.

30-12-13/45

of two plenary meetings - the opening and closing meetings, which had their own special programs). At the opening of the session the speech of the President of the Institute J. Darmoy (France) who had fallen ill, was read. This was followed by a lecture delivered by vicepresident R. S. Geri (Ireland). Both lectures dealt with general problems of statistical science and stressed their great importance for other fields of knowledge. The majority of lectures delivered in the sections on the problems of the statistical theory, demography, the application of statistics in industry and by municipal authorities were based upon the methods of mathematical statistics. Repeatedly the success achieved by Soviet mathematicians and statisticians, in particular the works by A. N. Kolmogorov, S. N. Bernshteyn, A. Ya. Khinchin and A. A. Konyus were mentioned. Two sessions which dealt with problems of fertility and the application of biometric models in connection with the problem of human genetics, were carried out in cooperation with the Biometrical Society. Of course the problem of using electronic machines for the purpose of dealing with statistical values was discussed in detail. Several sessions were devoted to problems of demography. Great interest was aroused by what was said by M. V. Ptucha about the preparations made in the

Card 2/4

Session of the International Statistical Institute.

30-12-13/45

USSR for a world census, the carrying out of trial censuses, and the methods used. A lively discussion was caused by problems of social-economic statistics. Much attention was paid by the congress to the impending agricultural world census in 1960. The lectures on the statistical evaluation of national economic programs and projects gave rise to characteristic and useful discussions. An important part is played in the planning of economic development by the application of the balancing method in economic statistics. This topic was dealt with by the lecture delivered by the Soviet delegation. At the end of the session a meeting of a special economic section was held in which the lectures were not connected by common themes. In this session especially the lecture delivered by T. V. Ryabushkin was discussed, who spoke about the index method in economic statistics, and which gave rise to a heated debate because of the negative attitude adopted by the Soviet statisticians with respect to the so-called "ideal form of the index". It turned out on this occasion that some statisticians of Western countries also adopted a negative attitude with respect to this form. At the final session problems of organization were solved after the heads of the various sections had reported on the results of their work. A new head of the

Card 3/4

'Session of the International Statistical Institute.

30-12-13/45

Institute and new honorary vice-presidents were elected. The complex of problems to be dealt with at the next (extraordinary) session of the Institute in September 1958 at Brussels during the international industrial exhibition was described upon. It must be mentioned that in view of the strict regulations and rules issued for the sessions (10 minutes were allowed for lectures and 5 for speaking in discussions) great importance must be attached to private conversations held among the scientists and men of learning during the numerous excursions, at receptions, etc. Results may be described as satisfactory.

AVAILABLE: Library of Congress

**1. Statistics—Conference**

Card 4/4

NEMCHINOV, V. S. (U.S.S.R.)

"Some Aspects of the Balance-Sheet Method as applied in the Statistics of Inter-dependent Dynamic Economic Models."

paper submitted 1st Session International Statistical Inst., Brussels, 2-8 Sep 53.

SHKOL'NIKOV, M.G.,; NEMCHENOV, V.S., akad., red.; KHOLIN, I.A., red.;  
GERASIMOVA, Ye.S., tekhn. red.

[The Angara-Yenisey problem] Angaro-Eniseiskaya problema.  
Moskva, Gosplanizdat, 1958. 142 p. (MIRA 11:12)  
(Angara Valley--Economic conditions)  
(Yenisey Valley--Economic conditions)



BAISHEV, S.B., akademik, etv.red.; NEMCHINOV, V.S., akademik, etv.red.;  
 BATISHCHEV-FARASOV, S.D., inzh.-geol., laureat Leninskoy premii,  
 red.; BOGATYREV, A.S., red.; KHRAMKOV, I.P., red.; BORUKAYEV, R.A.,  
 akademik, etv.red.; TOPORKOV, D.D., laureat Leninskoy premii, red.;  
 NOVOKHATSKIY, I.P., kand.geologo-mineralog.nauk, starshiy nauchnyy  
 setrudnik, red.; PONOMAREV, V.D., doktor tekhn.nauk, etv.red.;  
 ADAMCHUK, V.A., kand.ekon.nauk, starshiy nauchnyy setrudnik, red.;  
 LYUDOGOVSKIY, G.I., kand.tekhn.nauk, red.; ALEKSEYEV, G.M., kand.  
 ekon.nauk, starshiy nauchnyy setrudnik, red.; SEMENOV, M.N., red.;  
 SUVOROVA, I.I., red.; MOSEVICHEVA, L.N., red.; KUZNETSOV, Yu.N.,  
 red.; MASLHENNIKOV, L.I., spetsred.; POLYVYANNYY, I.R., spetsred.;  
 LYSSENKO, I.Z., kand.tekhn.nauk, spetsred.; ALFEROVA, P.F., tekhn.red.

[Proceedings of the joint scientific session in Kustanay devoted  
 to the problems of the Turgay regional and economic complex]  
 Trudy ob"edinennoi Kustanayskoi nauchnoi sessii, posvyashchennoi  
 problemam Turgayskogo regional'no-ekonomicheskogo kompleksa.  
 Kustanay, 1957. Alma-Ata, Izd-vo Akad.nauk Kazakhskoi SSR. Vol.1.  
 [Materials of plenary sessions] Materialy plenarnykh zasedanii.  
 1958. 150 p. Vol.2. [Geological section] Geologicheskaya sektiia.  
 1958. 393 p. Vol.3. [Materials of the mining metallurgy section]  
 Materialy gornometallurgicheskoi sektiia. 1958. 318 p. (MIRA 11:12)

1. Ob"yedinennaya Kustanayskaya nauchnaya sessiya, posvyashchennaya  
 problemam Turgayskogo regional'no-ekonomicheskogo kompleksa.  
 (Continued on next card)

BAISHEV, S.B.---(continued) Card 2.

2. AN Kazakhskoy SSR, vitse-president AN Kazakhskoy SSR (for Baishev).
3. AN SSSR, predsdatel' Soveta po izucheniyu proizvoditel'nykh sil AN SSSR (for Nemchinov).
4. Kustanayskiy geologo-razvedochnyy trest (for Batishchev-Tarasov).
5. Ministr geologii i okhrany nedr Kazakhskoy SSR (for Bogatyrev).
6. Sekretar' Kustanayskogo obkoma Kommunisticheskoy partii Kazakhstana (for Khrankev).
7. AN Kazakhskoy SSR, predsdatel' otdeleniya mineral'nykh resursov AN Kazakhskoy SSR (for Borukayev).
8. Zamestitel' direktora Kazakhskogo filiala Vsesoyuznogo nauchno-issledovatel'skogo instituta mineral'nogo syr'ya (for Toporkov).
9. Institut geologicheskikh nauk AN Kazakhskoy SSR (for Novokhatskiy).
10. Zamestitel' direktora Instituta metallurgii i obogashcheniya AN Kazakhskoy SSR (for Ponomarev).
11. Sovet po izucheniyu proizvoditel'nykh sil AN SSSR (for Adamchuk, Aleksayev).
12. Zaveduyushchiy laboratoriyey chernykh metallov Instituta metallurgii i obogashcheniya AN Kazakhskoy SSR (for Lyudogovskiy).
13. Uchenyy sekretar' Soveta po izucheniyu proizvoditel'nykh sil AN Kazakhskoy SSR (for Maslennikov).
14. Zamestitel' predsdatelya Soveta po izucheniyu proizvoditel'nykh sil AN Kazakhskoy SSR (for Lysenko).

(Kustanay Province--Economic conditions)

(Kustanay Province--Mines and mineral resources)

NEMCHINOV, V.S., akademik

Natural resources waiting for research and development. Izobr. i  
rate. no. 11:5-7 N '58. (MIRA 11:12)  
(Siberia, Eastern--Natural resources--Research)

~~MEMCHINOV~~, Vasilii Sergeyevich, akademik; MEL'NIKOVA, M.S., red.;  
STAROSTENKOVA, M.M., red.izd-va; ATROSHCHENKO, L.Ye., tekhn.red.

[Prospects for the development of the economy of Eastern  
Siberia] O perspektivakh razvitiia ekonomiki Vostochnoi Sibiri.  
Moskva, Izd-vo "Znanie," 1959. 28 p. (Vsesoiuznoe obshchestvo  
po rasprostraneniui politicheskikh i nauchnykh znanii. Ser. 9,  
no.2) (MIRA 12:4)

(Siberia, Eastern--Economic conditions)

**MINCHINGOV, V.S.**, akademik, otv.red.; **KNOROZ, M.M.**, red.isd-va;  
**GUSEVA, I.M.**, tekhn.red.

[Comprehensive use of water resources of the headstreams  
of the Amur and prospects for developing power] Kompleksnoe  
ispol'sovanie vodnykh resursov istokov Amura i perspektivy  
razvitiia energetiki. Moskva, 1959. 83 p. (MIRA 12:6)

1. Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh  
sil. Amurskaya i Zabaykal'skaya kompleksnyye ekspeditsii.  
(Amur Valley--Water resources development)